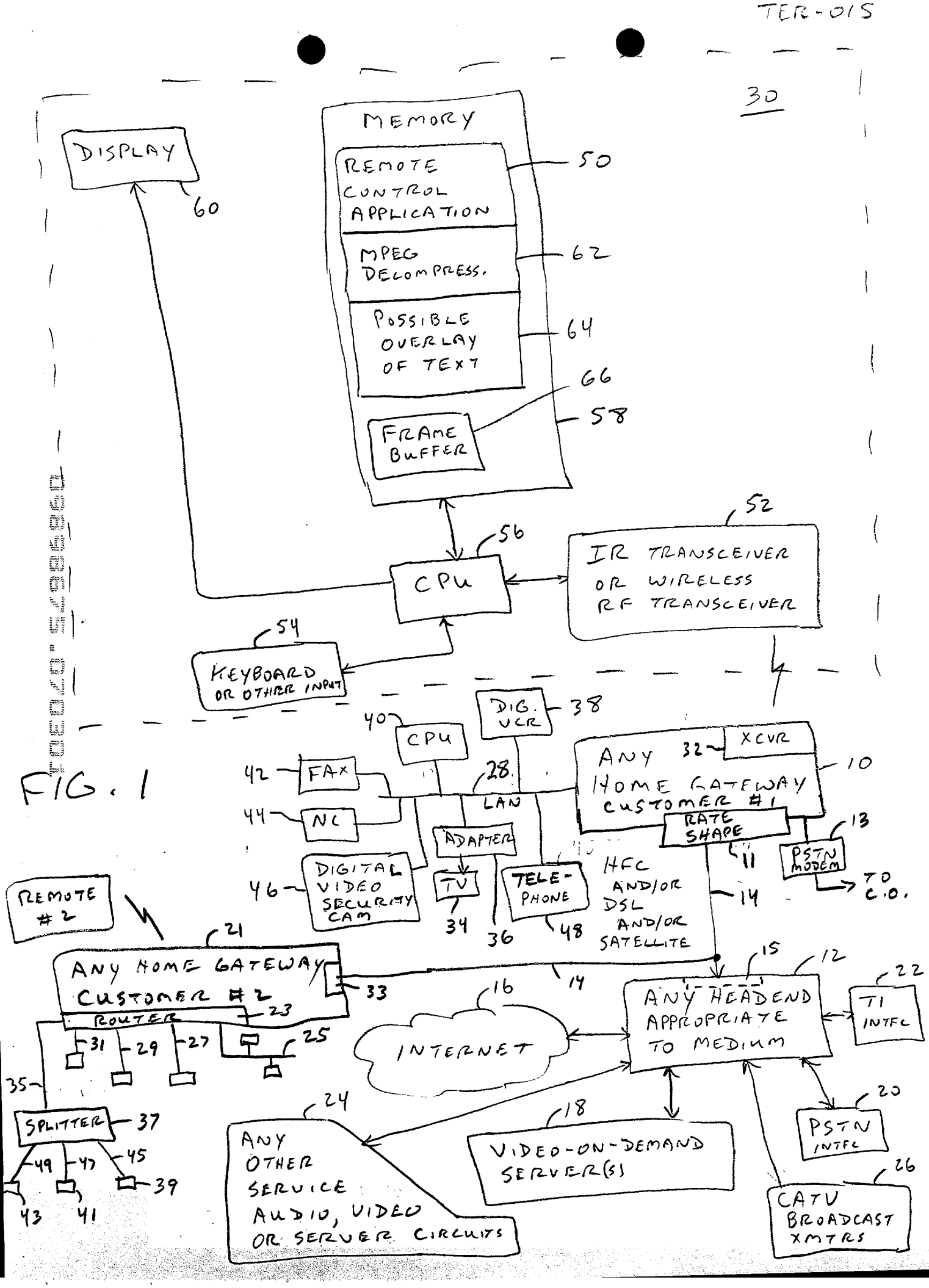
30
MEMORY
DISPLAY
60
REMOTE CONTROL APPLICATION
50
MPEG DECOMPRESS.
62
POSSIBLE OVERLAY OF TEXT
64
FRAME BUFFER
66
58
52
CPU
56
IR TRANSCEIVER OR WIRELESS RF TRANSCEIVER
54
KEYBOARD OR OTHER INPUT
DIG. VCR
38
40
CPU
42
FAX
28
LAN
44
NC
ADAPTER
46
DIGITAL VIDEO SECURITY CAM
TV
34
TELE-PHONE
36
48
ANY HOME GATEWAY CUSTOMER #1
32
XCVR
10
RATE SHAPE
11
PSTN MODEM
13
TO C.O.
HFC AND/OR DSL AND/OR SATELLITE
14
REMOTE #2
21
ANY HOME GATEWAY CUSTOMER #2
33
ROUTER
23
31
29
27
25
35
SPLITTER
37
49
47
45
39
43
41
INTERNET
16
15
12
ANY HEADEND APPROPRIATE TO MEDIUM
T1 INTFC
22
PSTN INTFC
20
24
ANY OTHER SERVICE AUDIO, VIDEO OR SERVER CIRCUITS
18
VIDEO-ON-DEMAND SERVER(S)
26
CATV BROADCAST XMTRS

FIG. 1

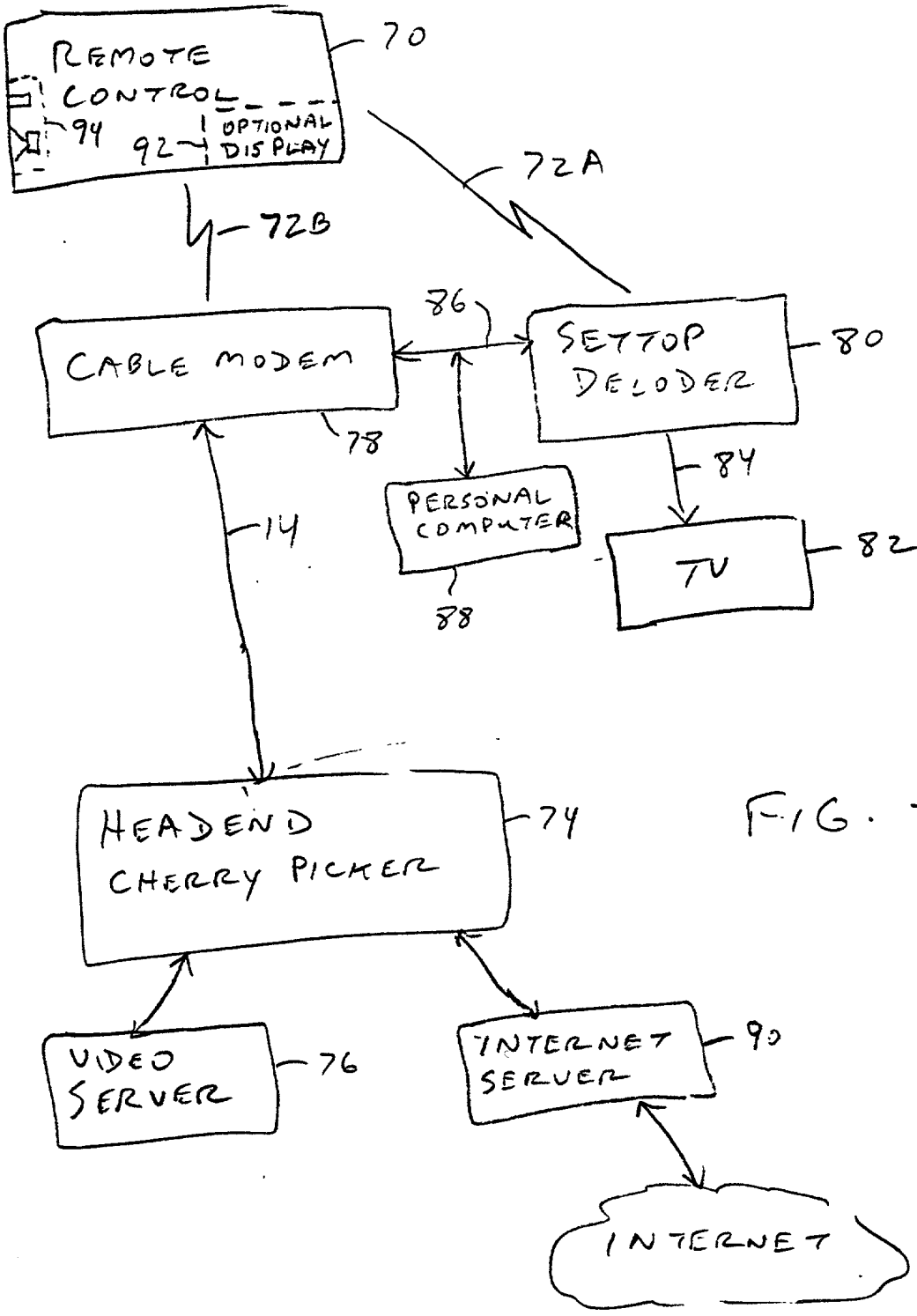
REMOTE CONTROL
70
94
92
OPTIONAL DISPLAY
72A
72B
CABLE MODEM
86
SETTOP DECODER
80
78
84
PERSONAL COMPUTER
14
TV
82
88
HEADEND CHERRY PICKER
74
VIDEO SERVER
76
INTERNET SERVER
90
INTERNET

FIG. 2

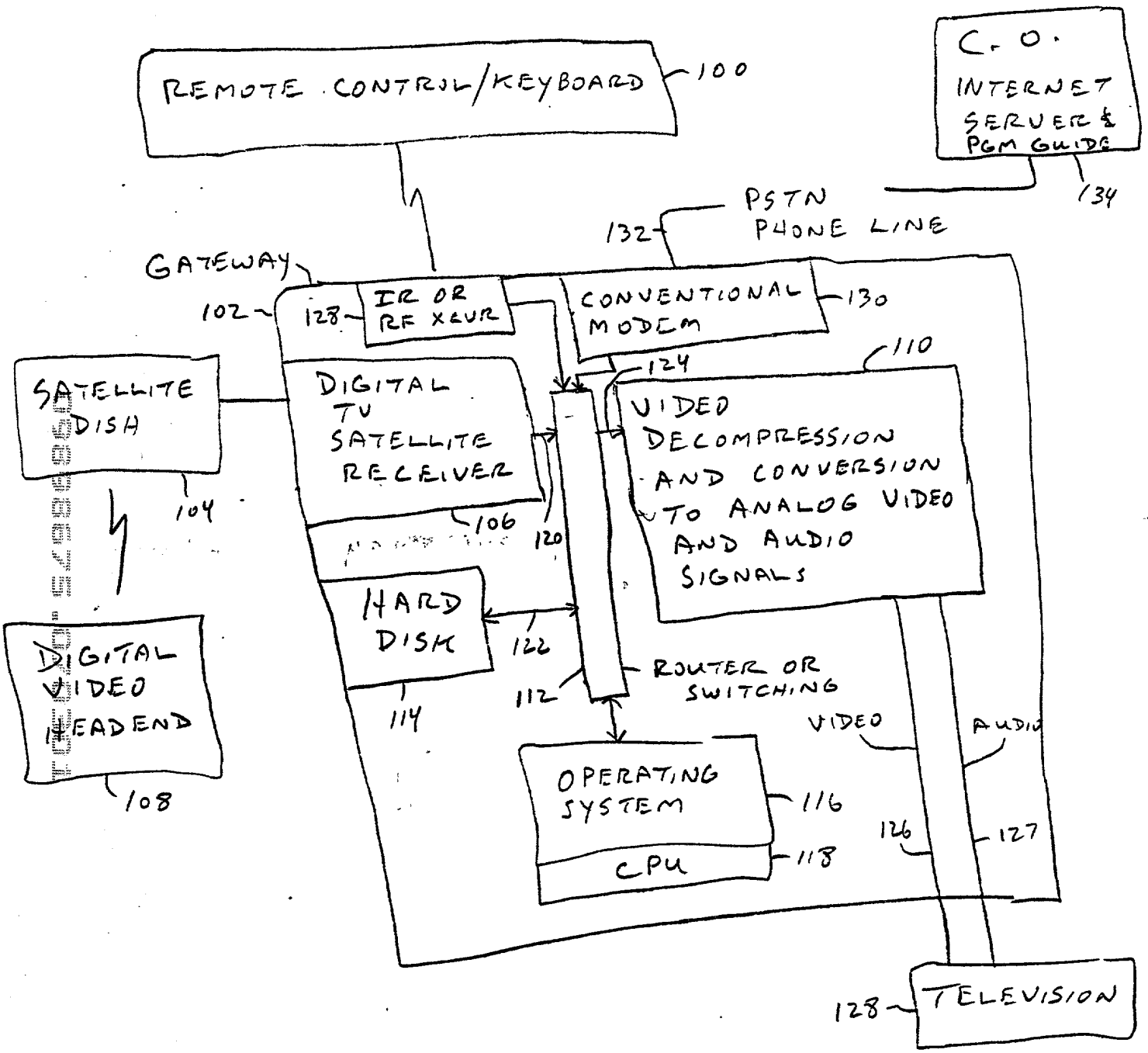
REMOTE CONTROL/KEYBOARD
100
C. O.
INTERNET
SERVER &
PGM GUIDE
134
PSTN
PHONE LINE
132
GATEWAY
102
IR OR
RF XEUR
128
CONVENTIONAL
MODEM
130
SATELLITE
DISH
104
DIGITAL
TV
SATELLITE
RECEIVER
106
124
110
VIDEO
DECOMPRESSION
AND CONVERSION
TO ANALOG VIDEO
AND AUDIO
SIGNALS
120
HARD
DISK
122
114
DIGITAL
VIDEO
HEADEND
108
ROUTER OR
SWITCHING
112
VIDEO
AUDIO
OPERATING
SYSTEM
116
CPU
118
126
127
TELEVISION
128

FIG. 3

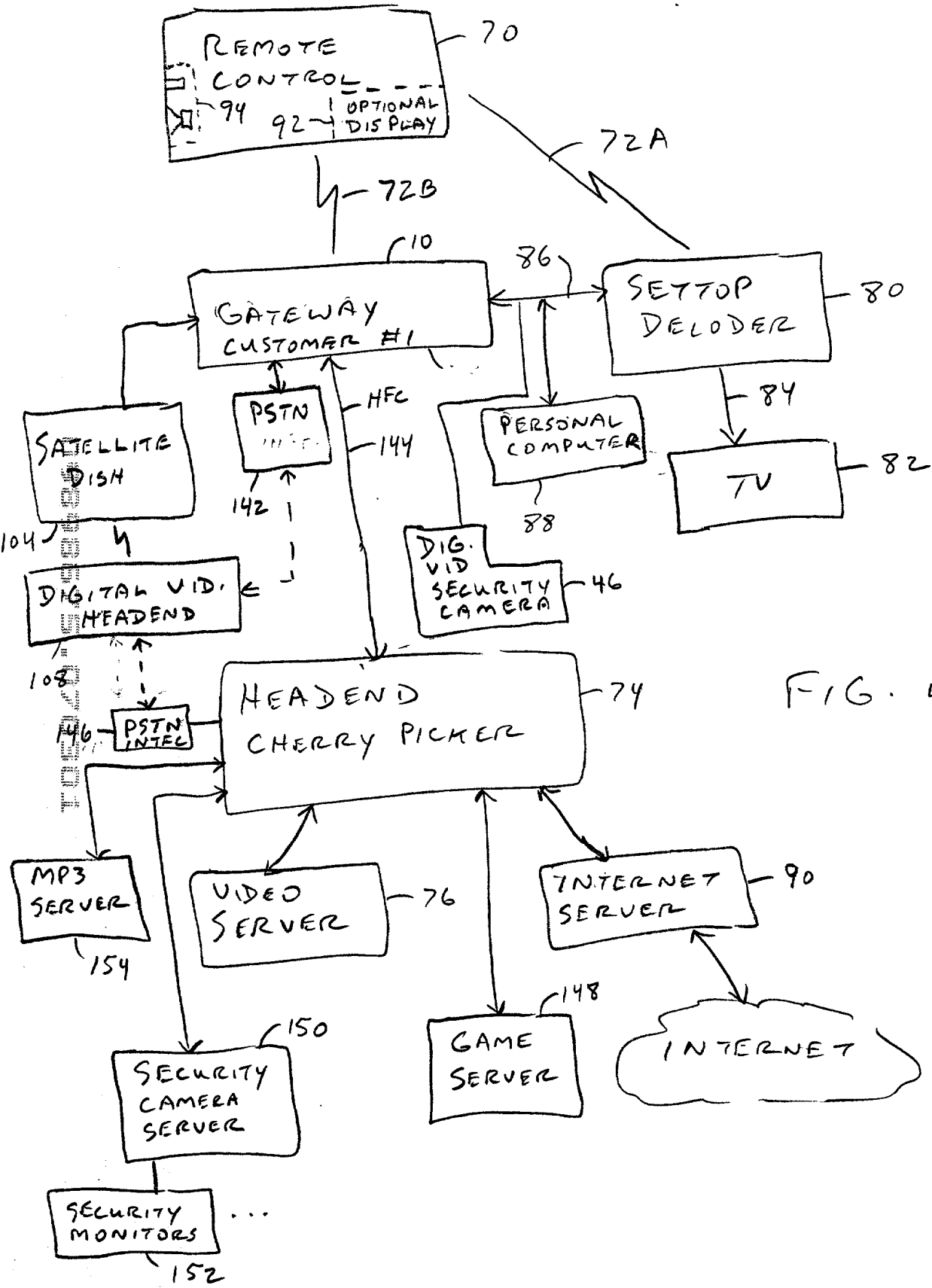
REMOTE CONTROL
70
94
92
OPTIONAL DISPLAY
72A
72B
10
86
GATEWAY CUSTOMER #1
SETTOP DECODER
80
PSTN INTF
HFC
144
84
SATELLITE DISH
PERSONAL COMPUTER
TV
82
142
88
104
DIGITAL VID. HEADEND
DIG. VID SECURITY CAMERA
46
108
HEADEND CHERRY PICKER
74
146
PSTN INTFC
MP3 SERVER
154
VIDEO SERVER
76
INTERNET SERVER
90
148
GAME SERVER
INTERNET
150
SECURITY CAMERA SERVER
SECURITY MONITORS
152

FIG. 4

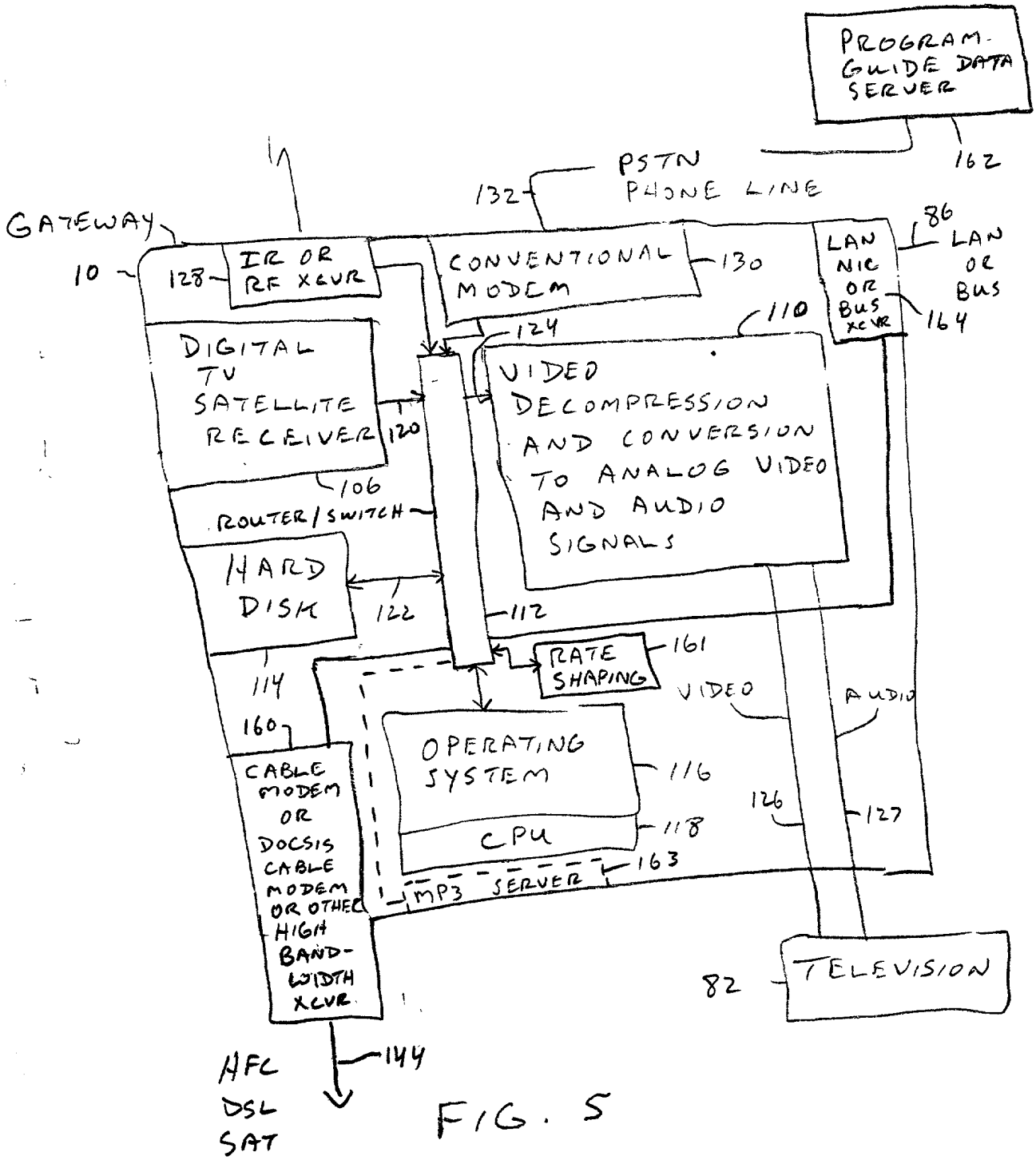
PROGRAM GUIDE DATA SERVER
162
PSTN PHONE LINE
132
GATEWAY
10
IR OR RF XCVR
128
CONVENTIONAL MODEM
130
LAN NIC OR BUS XCVR
86
LAN OR BUS
164
DIGITAL TV SATELLITE RECEIVER
120
124
110
VIDEO DECOMPRESSION AND CONVERSION TO ANALOG VIDEO AND AUDIO SIGNALS
106
ROUTER/SWITCH
HARD DISK
122
112
RATE SHAPING
161
VIDEO
AUDIO
114
160
OPERATING SYSTEM
116
CPU
118
126
127
163
MP3 SERVER
CABLE MODEM OR DOCSIS CABLE MODEM OR OTHER HIGH BAND-WIDTH XCVR
82
TELEVISION
HFC
DSL
SAT
144

FIG. 5

HEADEND ARCHITECTURE TO SEND DATA AND VOD AND/OR BROADCAST DATA TO CUSTOMERS VIA HFC

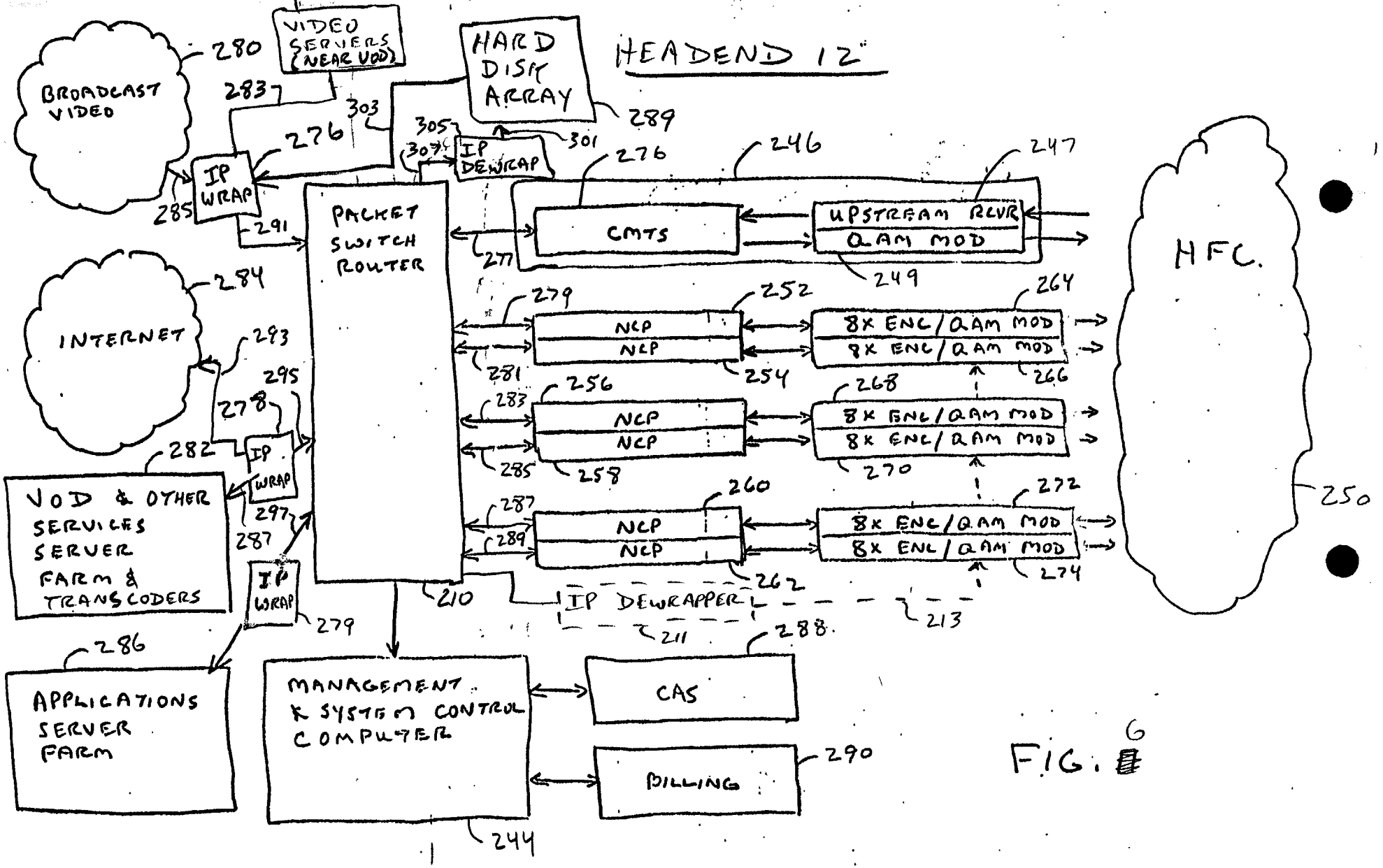

FIG. 6

EMBODIMENT FOR TRANSMISSION OF DATA AND VIDEO PROGRAM DATA FROM HEADEND TO CUSTOMERS

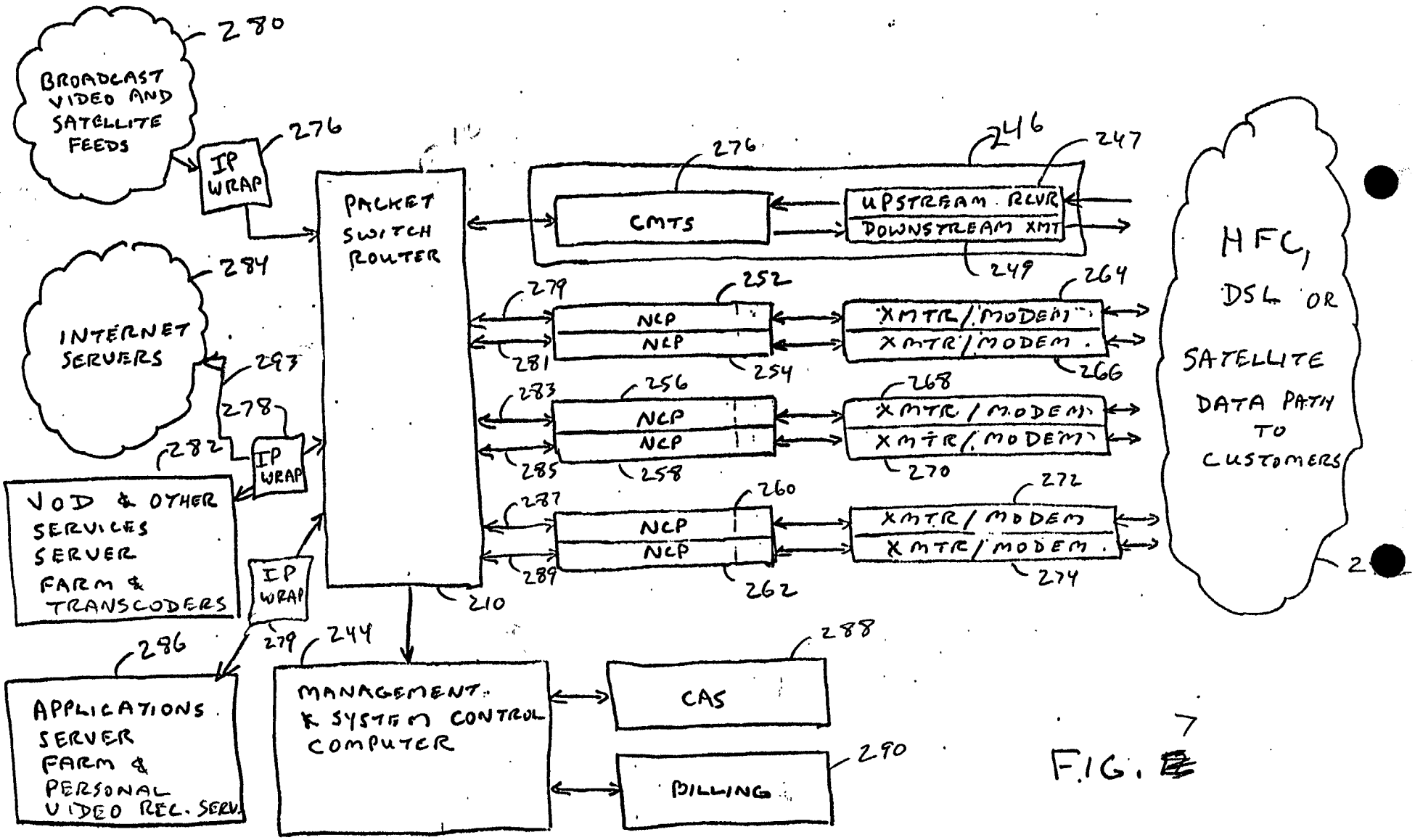

FIG. 7

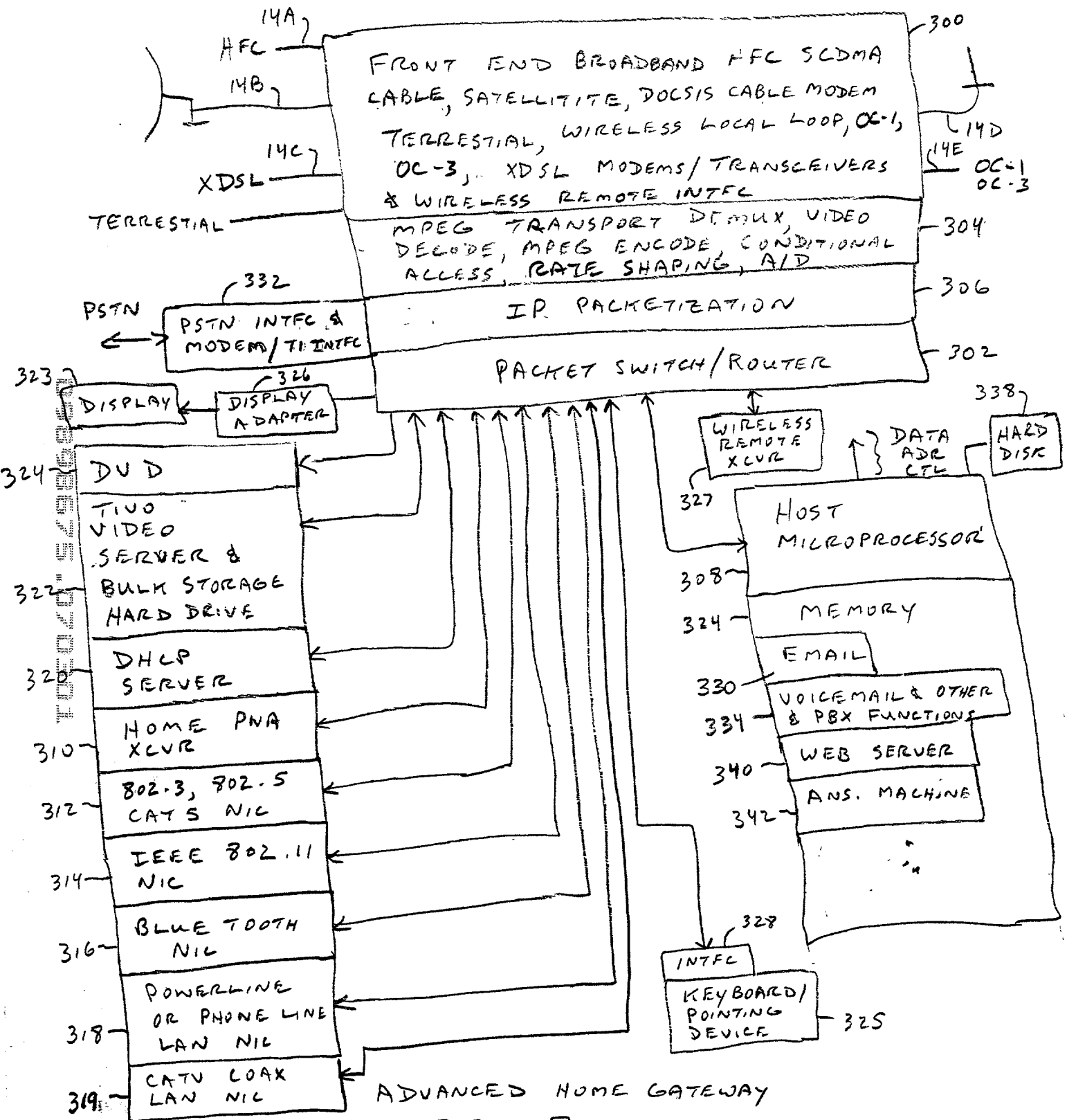
14A
HFC
14B
XDSL
14C
TERRESTIAL
FRONT END BROADBAND HFC SCDMA CABLE, SATELLITITE, DOCSIS CABLE MODEM TERRESTIAL, WIRELESS LOCAL LOOP, OC-1, OC-3, XDSL MODEMS/TRANSCEIVERS & WIRELESS REMOTE INTFC
300
14D
14E
OC-1
OC-3
MPEG TRANSPORT DEMUX, VIDEO DECODE, MPEG ENCODE, CONDITIONAL ACCESS, RATE SHAPING, A/D
304
IP PACKETIZATION
306
PACKET SWITCH/ROUTER
302
PSTN
332
PSTN INTFC & MODEM/T1 INTFC
323
DISPLAY
326
DISPLAY ADAPTER
338
HARD DISK
DATA ADR CTL
WIRELESS REMOTE XCVR
327
HOST MICROPROCESSOR
308
MEMORY
324
EMAIL
330
VOICEMAIL & OTHER & PBX FUNCTIONS
334
WEB SERVER
340
ANS. MACHINE
342
INTFC
328
KEYBOARD/POINTING DEVICE
325
DVD
TIVO VIDEO SERVER & BULK STORAGE HARD DRIVE
322
DHCP SERVER
320
HOME PNA XCVR
310
802.3, 802.5 CAT 5 NIC
312
IEEE 802.11 NIC
314
BLUE TOOTH NIC
316
POWERLINE OR PHONE LINE LAN NIC
318
CATV COAX LAN NIC
319
ADVANCED HOME GATEWAY

FIG. 8

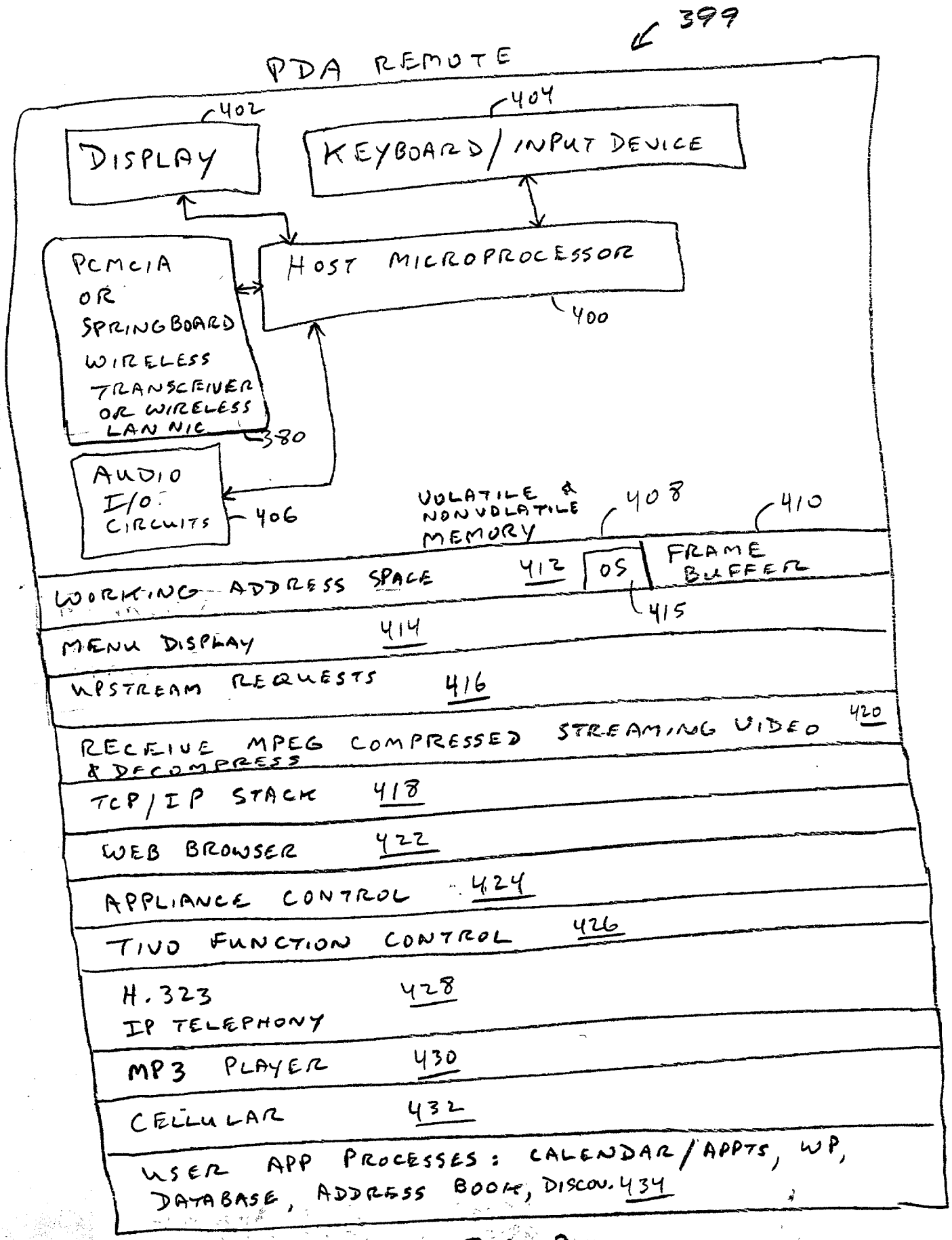
399
PDA REMOTE
402
DISPLAY
404
KEYBOARD/INPUT DEVICE
HOST MICROPROCESSOR
400
PCMCIA OR SPRINGBOARD WIRELESS TRANSCEIVER OR WIRELESS LAN NIC
380
AUDIO I/O CIRCUITS
406
VOLATILE & NONVOLATILE MEMORY
408
410
WORKING ADDRESS SPACE
412
OS
415
FRAME BUFFER
MENU DISPLAY
414
UPSTREAM REQUESTS
416
RECEIVE MPEG COMPRESSED STREAMING VIDEO & DECOMPRESS
420
TCP/IP STACK
418
WEB BROWSER
422
APPLIANCE CONTROL
424
TIVO FUNCTION CONTROL
426
H.323 IP TELEPHONY
428
MP3 PLAYER
430
CELLULAR
432
USER APP PROCESSES: CALENDAR/APPTS, WP, DATABASE, ADDRESS BOOK, DISCOV.
434

FIG. 9